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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,668	01/23/2004	Yongcai Wang	85334SMR	9105

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EXAMINER	
WALKE, AMANDA C	
ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/763,668	WANG ET AL	
	Examiner	Art Unit	
	Amanda C Walke	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,22-43,45 and 46* is/are rejected.

7)☒ Claim(s) *22, 44, and 47-49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/23/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-21, 23-43, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al (4,997,874) in view of Hutchings et al (5,283,015).

Asano et al disclose an aqueous suspension of a multivalent-metal-modified salicylic acid resin, which is suitable for use in the production of color-developing sheets for pressure-sensitive recording paper sheets. The pressure-sensitive copying paper is generally composed of a sheet (CB-sheet) coated with microcapsules of a non-volatile organic solvent containing an electron-donating organic compound (so-called pressure-sensitive dyestuff) and another sheet (CF-sheet) coated with an aqueous coating formulation containing an electron-attracting color-developing agent. The CB-sheet and CF-sheet are arranged with their coated sides maintained in a contiguous relation. The microcapsules are ruptured, for example, by a writing or printing impression of a ballpoint pen or a typewriter, whereby the solution of the pressure-sensitive dyestuff is caused to flow out of the capsules and is then brought into contact with the color-developing agent and a color is hence produced. By changing the combination of the layer of the microcapsules containing the pressure-sensitive dyestuff and the layer of the color-developing agent, many copies can be produced and self-contained pressure-sensitive copying papers (SC paper sheets) can be produced. The water-soluble anionic high-molecular compounds useful as

the dispersants (c) in this invention include a group of substances known as agents for imparting electrical conductivity to electrophotographic paper sheets and electrostatic recording paper sheets. However, it has not been known at all that they exhibit superb properties when employed as dispersants, especially, for forming multivalent-metal-modified salicylic acid resins into aqueous suspensions according to this invention. As suitable specific examples, may be mentioned salts of polystyrenesulfonic acid derivatives. Besides, salts of copolymers of styrenesulfonic acid and maleic anhydride, salts of sulfonation products of styrene-maleic acid copolymers, salts of copolymers of styrenesulfonic acid and other vinyl compounds, salts of sulfonated products of copolymers of styrene and other vinyl monomers, etc. may be used. Two or more of these salts may also be used in combination. While the reference teaches that a combination of polystyrenesulfonic acids may be employed, the reference is silent with respect to the molecular weights of the references.

Hutchings et al disclose a process for forming microcapsules having discrete capsule walls comprising the steps of: forming an emulsion of an oily core material phase in a continuous aqueous phase, said oily core material phase including isocyanatoacrylate or cyanoacrylate prewall reactants which react with said aqueous phase to form a pre-wall material around said oily core material phase; and enwrapping particles of said oily core material phase in an amine-formaldehyde condensation product produced by in situ condensation of an amine and formaldehyde, and the microcapsules produced thereby are disclosed. The most typical examples of useful acids are commonly known as pectins. Since pectin is a naturally occurring product, its composition will vary with the season and the source from which it is derived. As a result of this variation, some pectins will provide better microcapsules than others. Methylated

polygalacturonic acid is generally added to the aqueous phase in an amount of about 1.0 to 8% based on the amount of water in the aqueous phase, with the preferred amount being about 2 to 4%. Typical examples of sulfonated polystyrenes useful in the present invention are Versa TL500 and Versa TL503, products of National Starch Co. Useful sulfonated polystyrenes are generally characterized by a sulfonation degree of over 85% and preferably over 95%. The molecular weight of the sulfonated polystyrene is preferably greater than 100,000 and more preferably about 500,000-1,000,000 but other molecular weights can also be used. The sulfonated polystyrene is usually added to the aqueous phase in an amount of about 1 to 6% by weight. The quality of this product has also been found to vary with the method by which it is manufactured such that certain sulfonated polystyrenes are better than others.

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of Asano et al choosing to employ one sulfonated polystyrene having a molecular weight of 100,000-499,999 and one having a molecular weight of 500,000-1,000,000 as taught by Hutchings et al with reasonable a product having decreased yellowing.

Allowable Subject Matter

3. Claims 21, 44, and 47-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to teach or suggest to one of ordinary skill in the art to prepare a material as claimed by the instant claims 1 or 24 wherein the material is photohardenable.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang et al (6,468,708), Nishimura et al (5,647,896), Gao et al (6,537,717), Chen et al (5,120,475), Liang et al (4,977,060), Higuchi et al (6,635,399), and Yamadaet al (5,264,316) are cited for their teachings of similar materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C Walke whose telephone number is 571-272-1337. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amanda C Walke
Examiner
Art Unit 1752

ACW
September 20, 2004